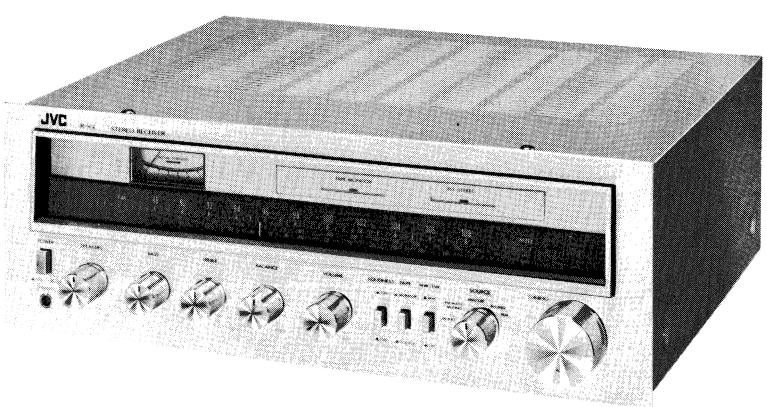
JVC

SERVICE MANUAL

MODEL
R-S5L
STEREO RECEIVER



No. 2481
March 1979

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Warning:
When replacing the parts marked with ⚠, be sure to use the designated parts to ensure safety.

1. Specifications

FM Tuner Section

Tuning Range	: 87.6 MHz – 108 MHz
Usable Sensitivity (IHF) S/N 46dB Stereo	: 10.3 dBf 0.9 μV/75 Ω
Sensitivity 50 dB quieting sensitivity	: 23μV/75Ω
Mono	: 14.8 dBf
Stereo	: 38.3 dBf
Distortion (DIN)	
Mono	: 0.10% (1kHz)
Stereo	: 0.20% (1kHz)
Signal to Noise Ratio	
Mono	: 74 dB DIN (82 dB IHF)
Stereo	: 65 dB DIN (70 dB IHF)
Selectivity	: 45 dB ±300 kHz, DIN (65 dB ±400 kHz)
Capture Ratio	: 1.0 dB
IF Rejection	: 90 dB at 98 MHz
Image Rejection	: 60 dB at 98 MHz
Stereo Separation	: 50 Hz – 35 dB 1 kHz – 45 dB 10 kHz – 35 dB

MW Tuner Section

Tuning Range	: 525 kHz – 1605 kHz
Usable Sensitivity	: 300μV/m, 30μV (External Antenna)
Signal to Noise Ratio	: 50 dB
Distortion	: 0.5%
Selectivity	: 35 dB ±9 kHz (40 dB ±10 kHz)

LW Tuner Section

Tuning Rnage	: 150 kHz – 350 kHz
Usable Sensitivity	: 500μV/m, 50μV (External Antenna)
Signal to Noise Radio	: 50 dB
Distortion	: 0.5%
Selectivity	: 35 dB ±9 kHz (40 dB ±10 kHz)

Amplifier Section

RMS power (Both channels driven, from 20 Hz to 20 kHz)	: 25 watts per channel at 8 ohms
RMS power (Both channels drive, at 1 kHz)	: 27 watts per channel at 8 ohms 35 watts per channel at 4 ohms
Total harmonic distortion	: 0.03% at rated power (0.008% at half rated power, 1 kHz)
Hum & Noise (DIN 50mW x 2 Output Power)	: PHONO 60 dB TAPE PLAY 60 dB
DIMENSIONS	: H : 149 mm (5-7/8") W : 420 mm (16-9/16") (For Continental Europe) 451 mm (17-3/4") (For U.
WEIGHT (net)	: D : 351 mm (13-13/16") 7.1 kg (15.7 lbs.) (For Continent Europe) 8.3 kg (18.3lbs.) (For U. K.)

2. Removal Procedures

2-(1) Top Cover and Bottom Plate

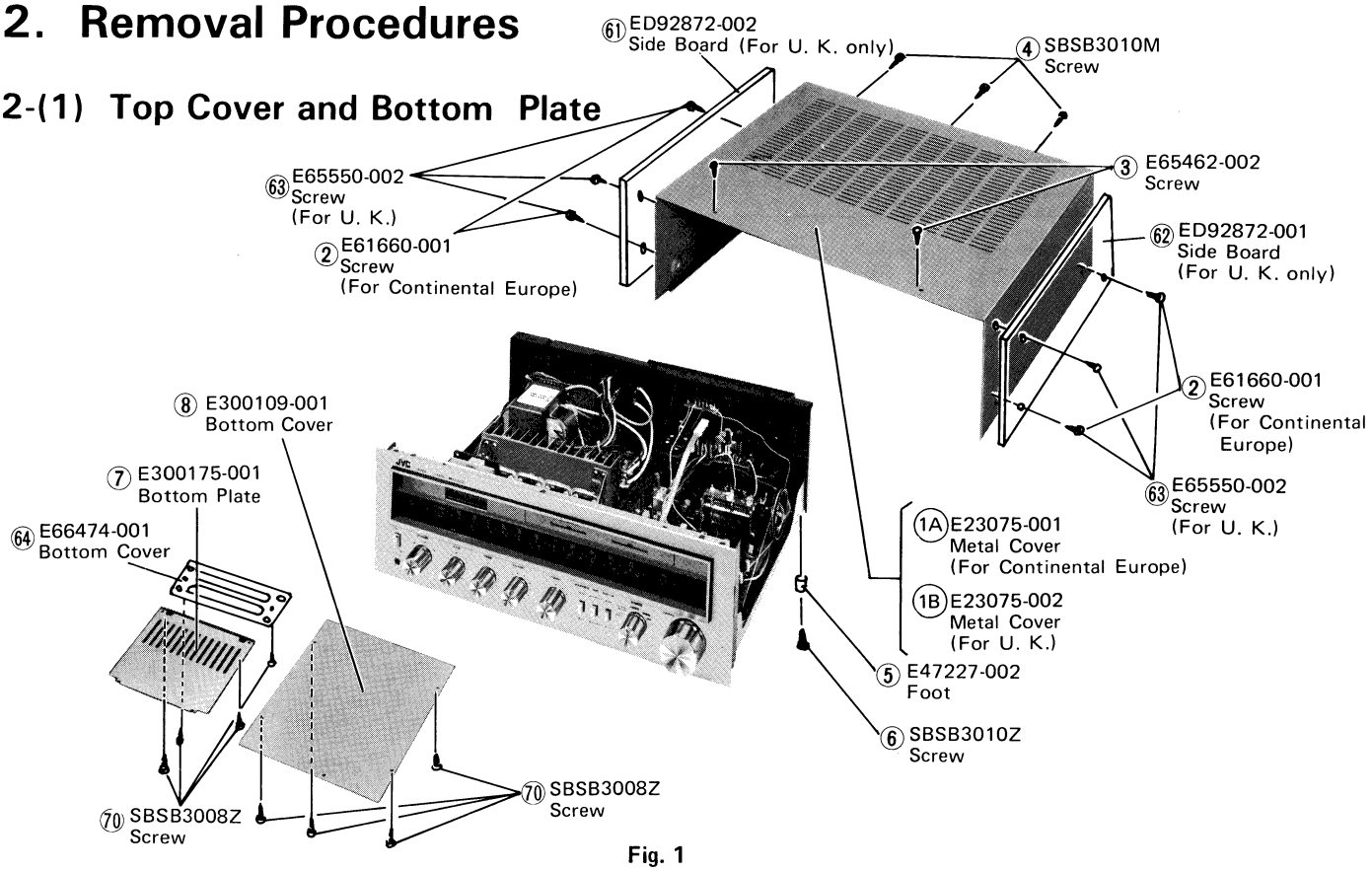


Fig. 1

2-(2) TXX-170 Main Amp. P.C. Board Ass'y

Procedures:

1. Remove the Top Cover. Refer to 2-(1) at page 2.
2. Pull out the all knobs carefully.
3. Remove 6 screws (Item No. 72 & 73).
4. Remove the Front Panel.
5. Remove 3 nuts of Variable Resistor. (BASS, TREBLE & BALANCE)
6. Desolder Ground TAB indicated on Fig. 2-B (See Arrow).
7. Remove 2 screws (Item No. 65) from the Bottom chassis.
8. Remove 4 screws (Item No. 71) from the both side of heatsink bracket.
9. Remove TXX-170-1 together with heatsink.

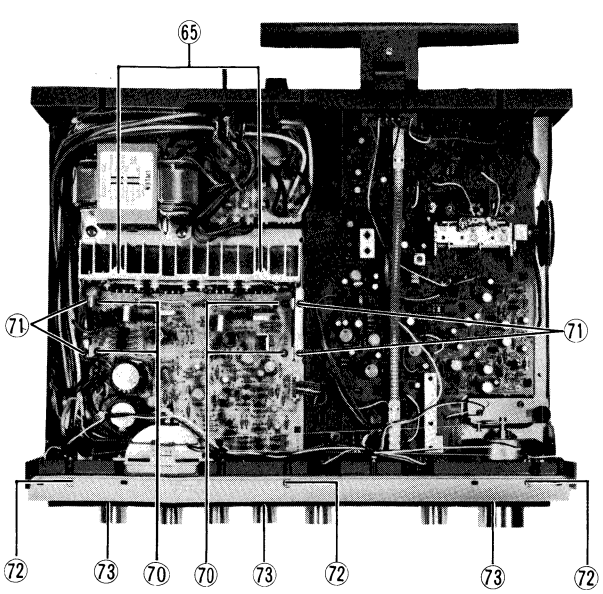


Fig. 2-A

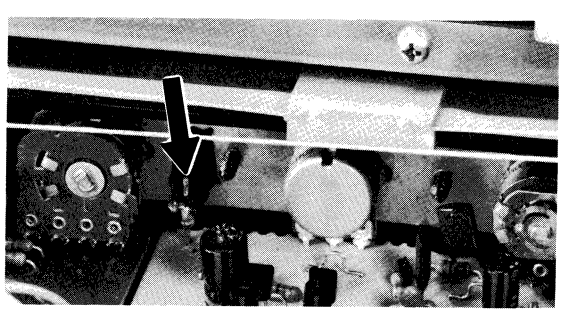


Fig. 2-B

Note:

Replacement of Power Transistors

Procedures:

1. Remove the Top cover.
2. Remove 2 screws (Item No. 65) from the Bottom chassis.
3. Remove 2 screws of Bottom plate.
4. Remove the Bottom plate.
5. Desolder all Power Transistors on TXX-170-1.
6. Remove 8 screws (Item No. 70 , 71) from the both sides of heatsink bracket.
7. Remove heatsink together with Power Transistors.

3. Main Parts Location and Parts Numbers

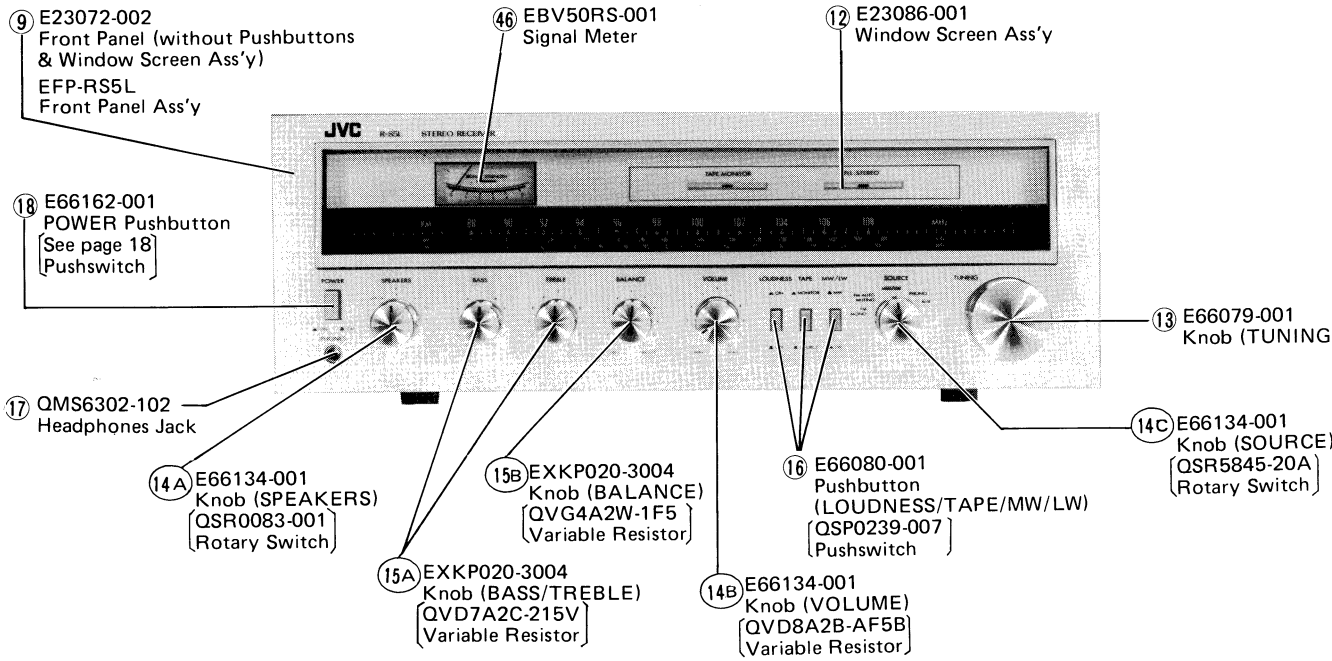


Fig. 3

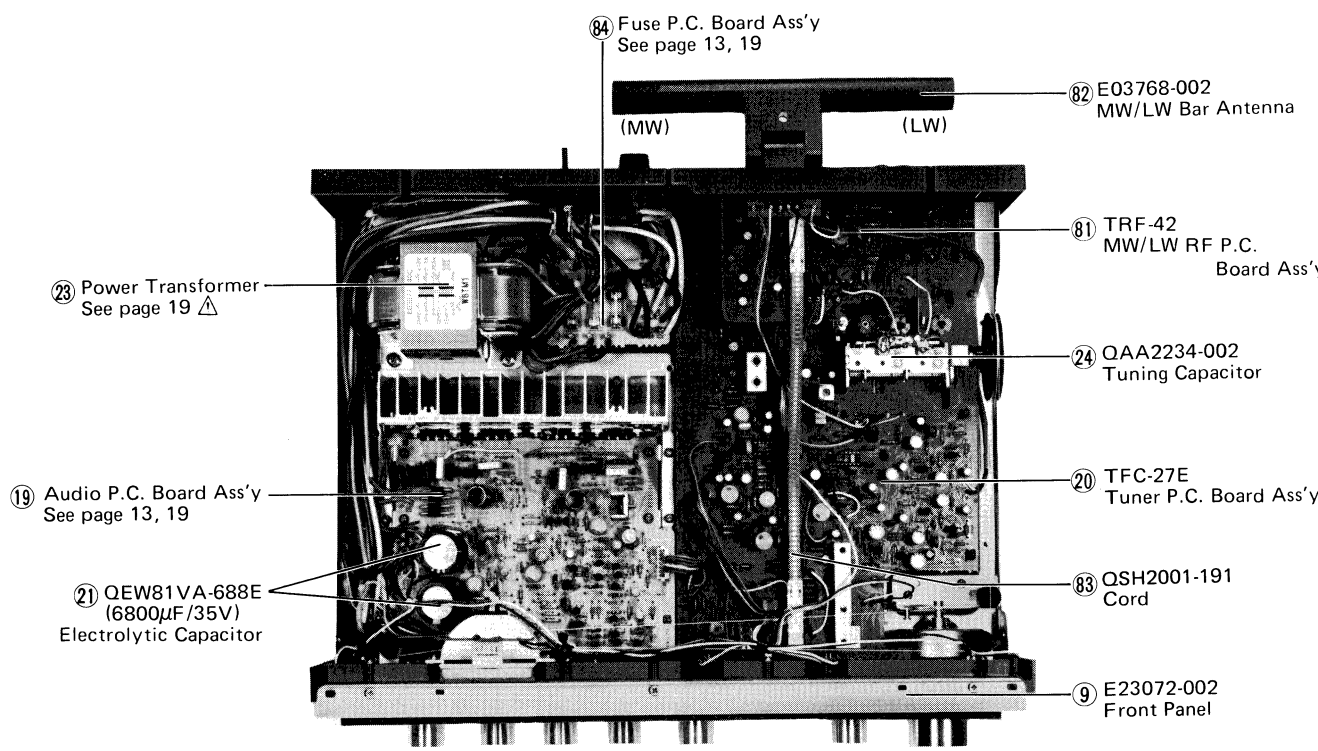


Fig. 4

4. Exploded View and Part Numbers

4-(1) Front Panel

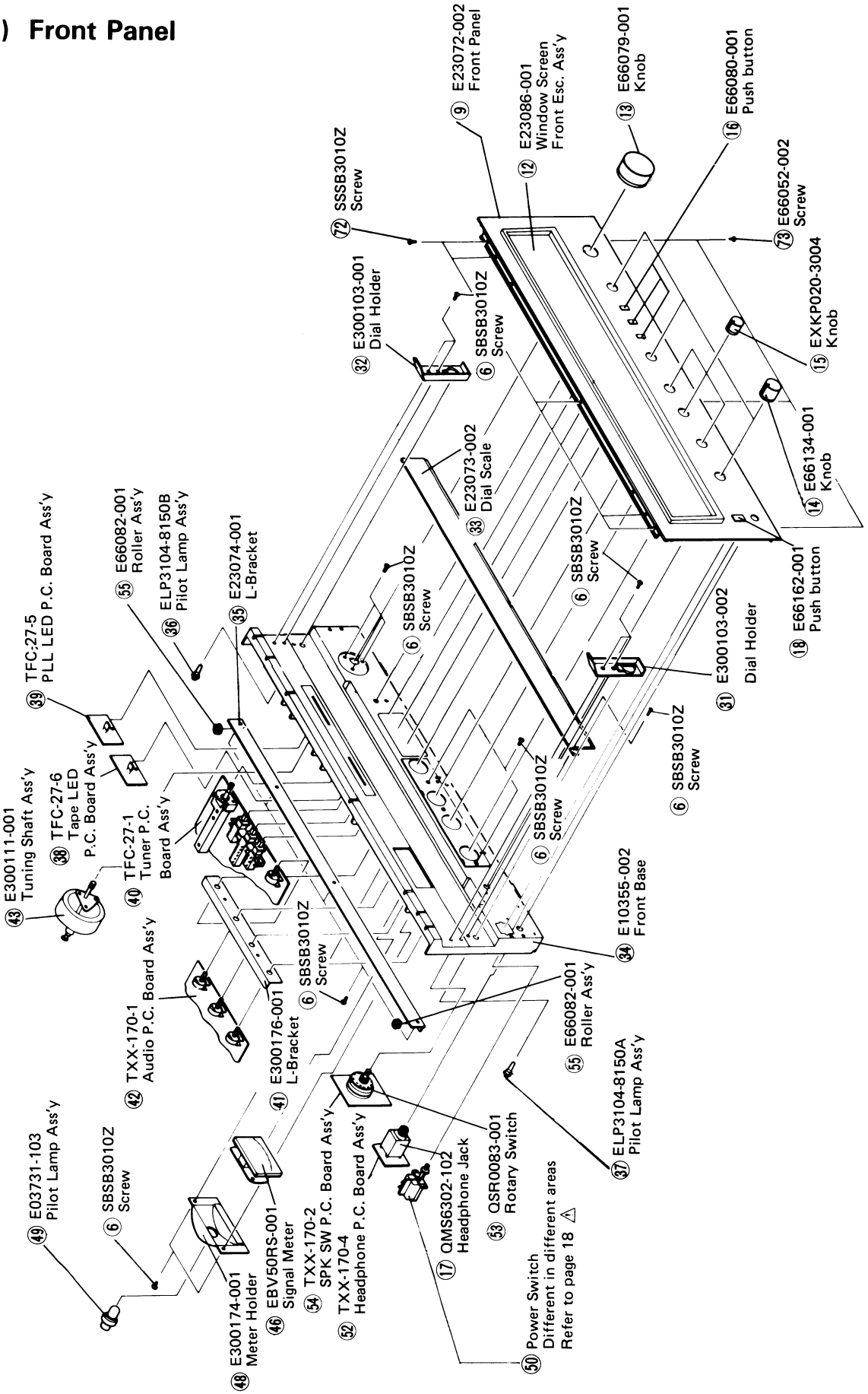

⑨ E23072-002 Front Panel
⑫ E23086-001 Window Screen Front Esc. Ass'y
⑬ E66079-001 Knob
⑯ E66080-001 Push button
⑦② SSSB3010Z Screw
⑦③ E66052-002 Screw
③② E300103-001 Dial Holder
⑥ SBSB3010Z Screw
⑮ EXKP020-3004 Knob
③③ E23073-002 Dial Scale
⑭ E66134-001 Knob
⑱ E66162-001 Push button
③① E300103-002 Dial Holder
⑥ SBSB3010Z Screw
③⑨ TFC-27-5 PLL LED P.C. Board Ass'y
⑤⑤ E66082-001 Roller Ass'y
③⑥ ELP3104-8150B Pilot Lamp Ass'y
③⑤ E23074-001 L-Bracket
④③ E300111-001 Tuning Shaft Ass'y
③⑧ TFC-27-6 Tape LED P.C. Board Ass'y
④⓪ TFC-27-1 Tuner P.C. Board Ass'y
④② TXX-170-1 Audio P.C. Board Ass'y
④① E300176-001 L-Bracket
⑥ SBSB3010Z Screw
③④ E10355-002 Front Base
⑤⑤ E66082-001 Roller Ass'y
④⑨ E03731-103 Pilot Lamp Ass'y
⑥ SBSB3010Z Screw
⑤④ TXX-170-2 SPK SW P.C. Board Ass'y
⑤② TXX-170-4 Headphone P.C. Board Ass'y
⑰ QMS6302-102 Headphone Jack
⑤③ QSR0083-001 Rotary Switch
③⑦ ELP3104-8150A Pilot Lamp Ass'y
④⑧ E300174-001 Meter Holder
④⑥ EBV50RS-001 Signal Meter
⑤⓪ Power Switch Different in different areas Refer to page 18 ⚠

Fig. 5

4-(2) Rear Panel

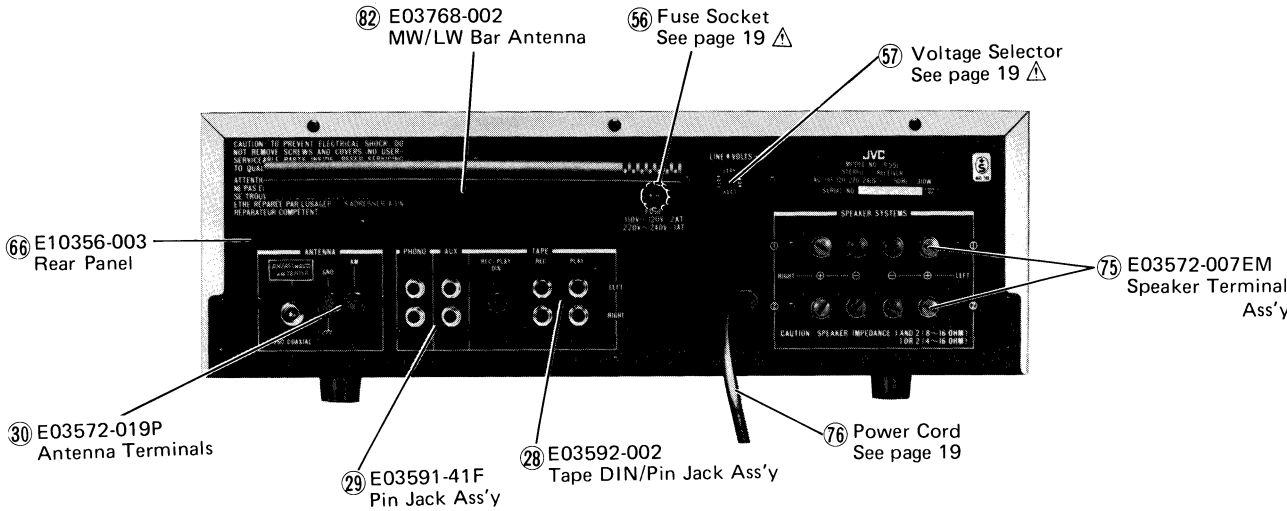


Fig. 6

5. Dial Stringing Procedures

Take the following 8 steps (from ① to ⑧).

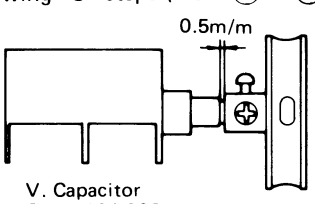


Fig. 7

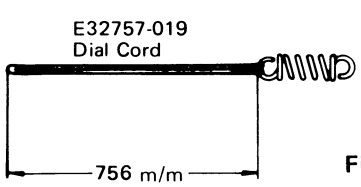


Fig. 8

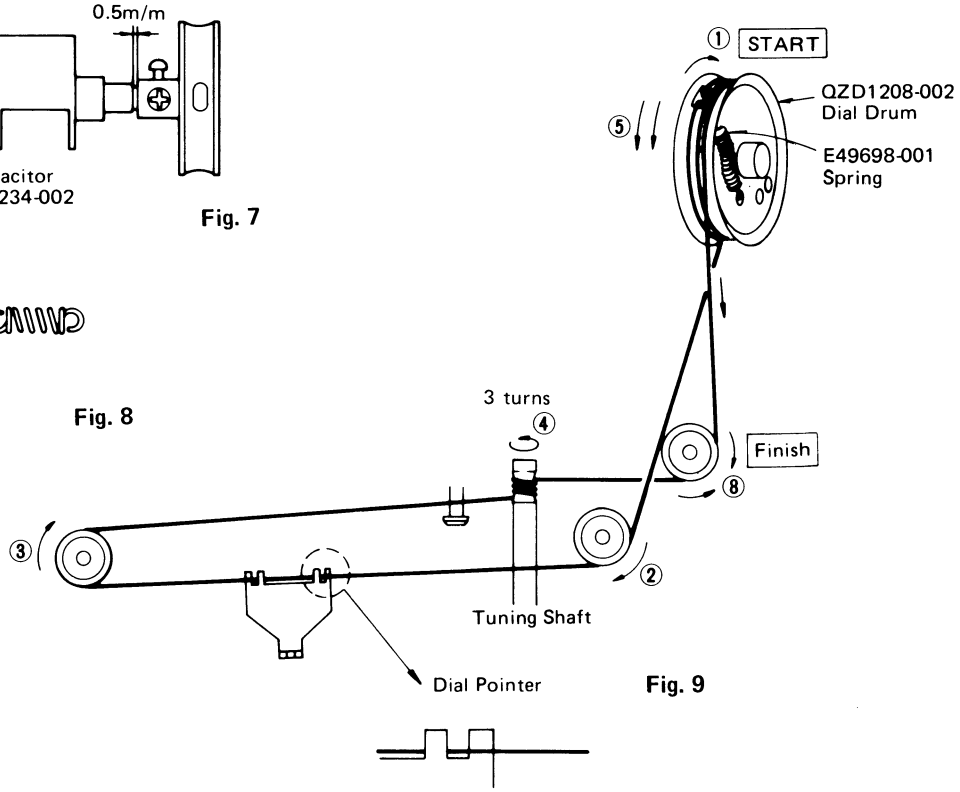
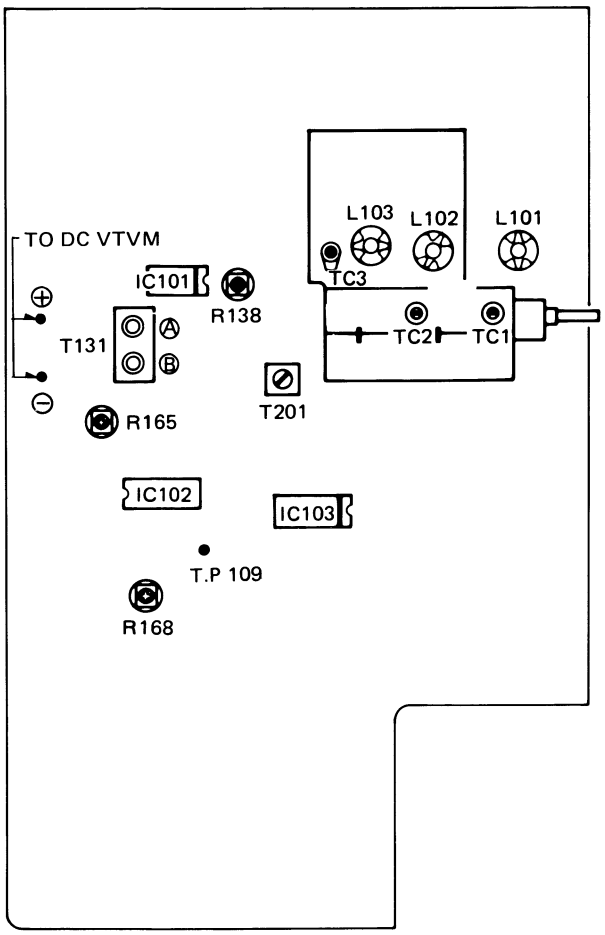


Fig. 9

Fig. 10

6. FM/MW/LW Tuner Alignment Procedures



Alignment Location of TFC-27 FM/AM Tuner P.C. Board Ass'y.

Fig. 11-A

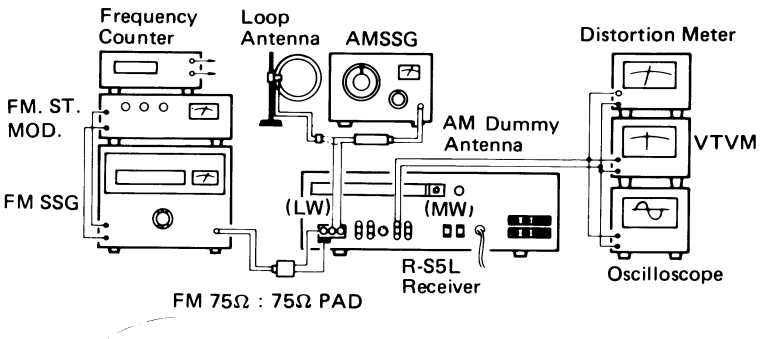


Fig. 11-B

6-(1) FM Section

Discriminator, Distortion and Signal Gain

1. Turn the Source Select knob to FM MONO.
2. Connect an RF generator, 1kHz modulation and 75kHz deviation, to the antenna terminals on the rear panel through a dummy antenna.
3. Connect an Oscilloscope, Distortion Meter and VTVM to the Rec. Out jacks on the rear panel.
4. Connect a DC VTVM to Tab ⊕ (Positive) and Tab ⊖ (Ground).
5. Tune to a frequency where there is no broadcasting.
6. Adjust a core indicated arrow Ⓐ of T131 so that the DC VTVM indicates "0" (zero).
7. Set the RF generator to 98MHz.
8. Set the dial pointer to 98MHz.
9. Adjust a core indicated arrow Ⓑ of T131 so that the distortion is minimized at a value less than 0.4%.

Tracking and Sensitivity

Precaution: No adjustment is necessary. The tracking and sensitivity have been adjusted properly and completely at the factory. If any special reason occasioned, take the following procedures carefully.

Low Frequency

1. Connect an RF generator to the antenna terminals on the rear panel through a dummy antenna.
2. Set an RF generator to 88MHz, a modulation of 1kHz and a deviation of 75kHz to provide an input of 2μV.
3. Connect a VTVM and an Oscilloscope to the Rec. Out jacks on the rear panel.
4. Set the dial pointer to 88MHz.
5. Adjust the three coils L103, L102 and L101 in the tuning gang to maximize the output.

High Frequency

6. Set the RF generator to 108MHz, a modulation of 1kHz and a deviation of 75kHz, to provide an input of 2μV.
7. Set the dial pointer to 108MHz.
8. Adjust the FM trimmers TC3, TC2 and TC1 in the tuning gang to maximize the output.
9. Repeat these high and low frequencies adjustment alternately until maximum sensitivity is obtained.

Multiplex and Stereo Separation

Multiplex

1. Turn the source select knob to FM AUTO/MUTING.
2. Set the Stereo signal generator as follows: 400Hz modulation frequency, 7.5kHz deviation pilot, 67.5kHz main and sub carriers. Connect its output to an RF generator.
3. Connect an RF generator to the antenna terminals through a dummy antenna.
4. Connect a VTVM, an Oscilloscope and a Distortion Meter to the Rec. Out jacks on the rear panel.
5. Set the RF generator to 98MHz and output of 1mV.
6. Set the dial pointer to 98MHz.
7. Connect the Frequency Counter to 19kHz Test Point. (T.P-109) See Fig. 11-A.
8. Switch off the pilot signal of Stereo Modulator.
9. Adjust R165 so that the frequency counter indicates 19kHz (0~ − 50Hz).

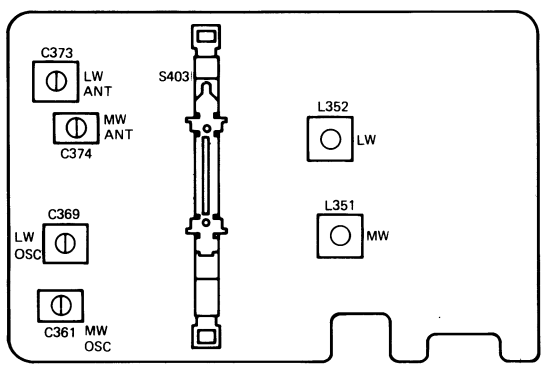
Stereo Separation

10. Switch the selector of Stereo Modulator to left channel modulation.
11. Adjust R168 so that the output of right channel is minimized.
12. Switch the selector of the modulator to right channel modulation.
13. Adjust R168 so that the left channel is minimized.
14. Set R168 to a average, if the separation of left and right are different.

Muting Level

Note: No adjustment is necessary. However, if the check-up is required, take the following steps.

1. Set the source select knob to FM AUTO/MUTING during this adjustment procedures.
2. Connect a VTVM and an Oscilloscope to the Rec. Out jacks on the rear panel.
3. Set the RF generator to 108MHz, a modulation of 1kHz and a deviation of 75kHz, to provide an input of 5μV.
4. Turn R138 counterclockwise and remember the point (or position) at which the muting ceases operating.
5. Turn R138 clockwise slightly so that the output level drops by 1dB.
6. Attenuate the output of the RF generator to 2dB from 5μV of step 2 and check that the muting is still operating.



Alignment Location of TRF-42 MW/LW RF P.C. Board Ass'y

Fig. 11-C

6-(2) MW/LW Section

Note: ( ) for LW Alignment Procedure

Tracking and Sensitivity

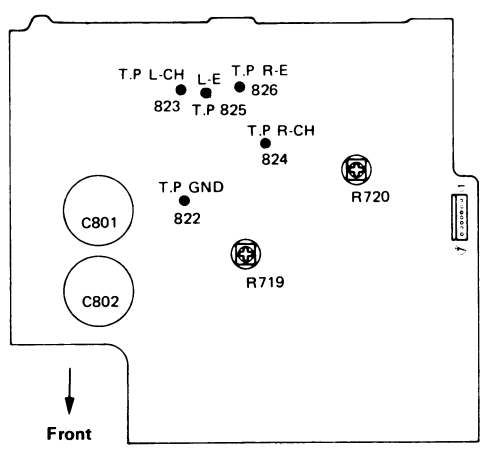
Low Frequency

1. Connect the RF generator to the antenna terminals on the rear panel, set this to 600kHz (160kHz) with 30% modulation at 400Hz.
2. Connect an AC VTVM and an Oscilloscope to the Rec. Out jacks on the rear penel.
3. Set the dial pointer to 600kHz (160kHz).
4. Adjust OSC coil L351 (L352) and the ferrite bar antenna adjusting the coil to maximized the output signal. Left ferrite bar is for MW (Right ferrite bar is for LW)

High Frequency

5. Set the RF generator to 1400kHz (350kHz) with 30% modulation at 400Hz.
6. Set the dial pointer to 1400kHz (350kHz).
7. Adjust the trimmers C361 (C369) and C374 (C373) in the tuning gang so that the output signal is maximized.
8. Repeat these high and low frequencies adjustment procedures alternately until maximum.

7. Power Amplifier Idling Current Adjustment Procedure



Adjustment Location on TXX-170 Main Amp. P.C. Board Ass'y Fig. 12

Precaution:

(1) Allow the set to warm up at least 5 minutes before connecting a DC VTVM.

(2) Must keep the heatsinks cooling to prevent overheating and consequent destruction of the semiconductor junction and set the volume control to minimum during these adjustment procedures.

( ): for Right channel Adjustment

Procedures:

1. Turn R719 and R720 fully counterclockwise before the power switch on.
2. Connect a DC VTVM to the Test Point L-CH and L-E (R-CH and R-E).
3. Adjust R719 (R720) for DC VTVM reading of 5mV.

8. Printed Circuit Board Ass'y and Parts List

8-(1) TFC-27E FM/MW/LW Tuner and Equalizer Amp. P.C. Board Ass'y

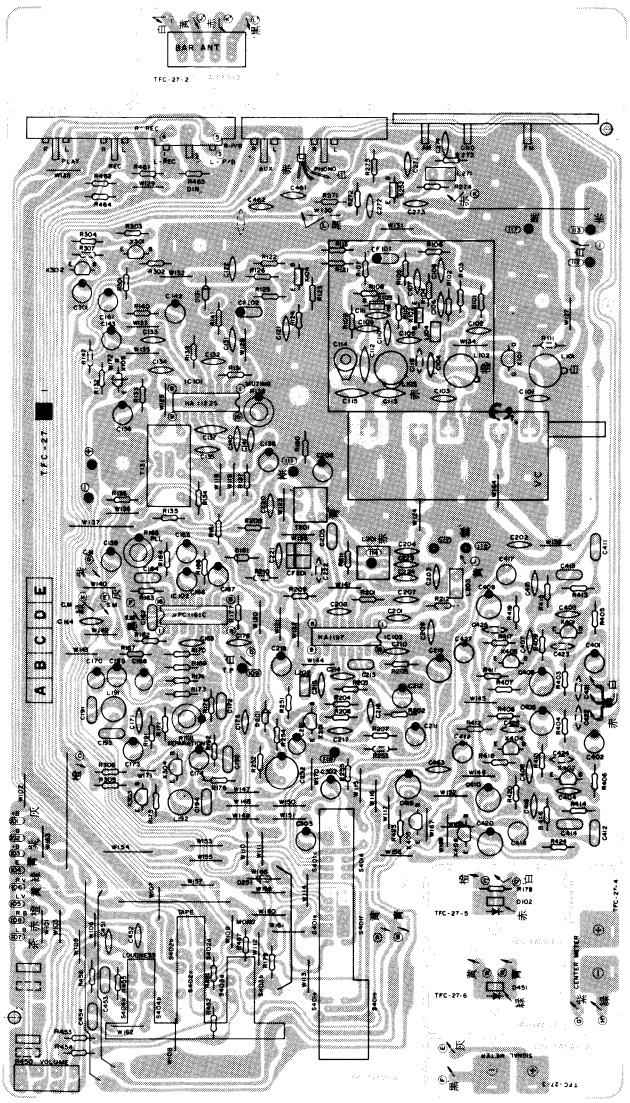


Fig. 13

Each Individual P.C. Board Ass'y Location

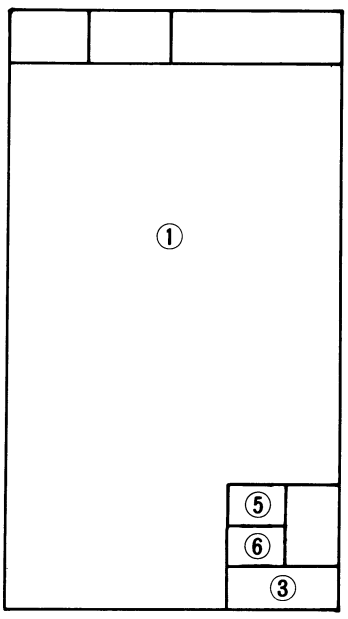


Fig. 14

① TFC-27-1:
FM/AM Tuner & Equalizer Amp.
P.C. Board Ass'y
③ TFC-27-3:
Signal Meter P.C. Board Ass'y
⑤ TFC-27-5:
LED P.C. Board Ass'y (PLL STEREL)
⑥ TFC-27-6:
LED P.C. Board Ass'y (TAPE MONITOR)

Note:

(1) The specific symbols (赤. 黒. 白 . . . etc.) on a surface of above P.C. Board are actually unrelated to the repair service and are significant denotement in order to process the proper assembly of P.C. Board at the factory.

Transistors

Item No.	Part Number	Rating		Description	
		Pc	fT		Maker
X101	2SK168(E,F)	0.2W	300MHz	Silicon	Hitachi
X102	2SC535(B,C)	0.1W	940MHz	"	"
X103	2SC1342(B,C)	"	410MHz	"	"
X104	2SC535(B,C)	"	940MHz	"	"
X252	2SC461(B)	0.2W	230MHz	"	"
X301	2SC458(D)	"	"	"	"
X302	2SA872V(E)	0.3W	120MHz	"	"
X303	2SC458(D)	0.2W	230MHz	"	"
X304	2SC458(D)	"	"	"	"
X401	2SA872AV(E)	0.3W	120MHz	"	"
X402	2SA872AV(E)	"	"	"	"
X403	2SC2546(E,F)	0.3W	90MHz	"	"
X404	2SC2546(E,F)	"	"	"	"
X405	2SA458(D)	0.2W	230MHz	"	"
X406	2SA872AV(E)	0.3W	120MHz	"	"

Integrated Circuit

Item No.	Part Number	Rating	Description	
		Pc		Maker
IC101	HA11225	0.59W	I.C.	Hitachi
IC102	μPC1161C	0.4W	"	NEC
IC103	HA1197	0.49W	"	Hitachi

Diodes

Item No.	Part Number	Rating	Description	
				Maker
D102	TLR205		LED	Toshiba
D131	1S2076-31		Silicon	Hitachi
D161	1S2076-31		"	"
D251	1S2076-31		"	"
D451	TLG205		LED	Toshiba

Filters

Item No.	Part Number	Rating	Description
CF101	E03357-009		Ceramic filter
CF102	E03357-009		"
CF201	E03613-015		AM ceramic filter

Coils & Transformers

Item No.	Part Number	Rating	Description
L101	E03477-031		RF coil
L102	E03477-035		"
L103	E03477-034		"
L104	E03522-1R5KY	1.5μH	"
L105	E03695-001	2.0μH	Choke Coil
L191	Y00118-103	10mH	"
L192	Y00118-103		
L202	E03522-391KY	390μH	Choke coil
L204	Y00118-103	10mH	"
L271	E03522-101KY	100μH	RF coil
T131	E03793-001		FM Det. Trans.
T201	E03613-017		IF Trans.

Capacitors

Item No.	Part Number	Rating		Description
C101	QCS31HJ-120Z	12pF	50V	Ceramic
C102	QCF31HP-103Z	0.01μF	"	"
C103	QCS31HJ-150Z	15pF	"	"
C104	QCS21HJ-3R0	3pF	"	"
C105	QCS21HJ-2R0	2pF	"	"
C106	QCS31HJ-151Z	150pF	"	"
C107	QCF31HP-103Z	0.01μF	"	"
C108	QCF31HP-103Z	"	"	"
C109	QCF21HP-103	"	"	"
C110	QCT25CH-100Z	10pF	"	"
C111	QCT25CH-220Z	22pF	"	"
C112	QCT05CH-7R0	7pF	"	"
C113	QCT05PH-120	12pF	"	"
C114	QAT3001-014			Trimmer
C115	QCT05PH-120	12pF	"	Ceramic
C116	QCS11HJ-101	100pF	"	"
C121	QCF21HP-223	0.022μF	"	"
C122	QCF31HP-223Z	"	"	"
C131	QCF31HP-223Z	"	"	"
C132	QCF21HP-223	"	"	"
C133	QCS31HJ-330Z	33pF	"	"
C134	QCF31HP-223Z	0.022μF	"	"
C135	QCF31HP-223Z	"	"	"
C136	QET61AR-107Z	100μF	10V	Electrolytic
C137	QCF21HP-223	0.022μF	50V	Ceramic
C138	QET51CR-476	47μF	16V	Electrolytic
C139	QET61HR-474Z	0.47μF	50V	"
C140	QCF31HP-223Z	0.022μF	"	Ceramic
C141	QCF21HP-223	"	"	"
C142	QET61ER-106Z	10μF	25V	Electrolytic
C143	QET61HR-475Z	4.7μF	50V	"
C144	QCF31HP-223Z	0.022μF	"	Ceramic
C161	QET61ER-106Z	10μF	25V	Electrolytic
C162	QFM31HK-473	0.047μF	50V	Mylar
C163	QCS31HJ-101Z	100pF	"	Ceramic
C164	QFP31HJ-471	470pF	"	Polypropylene
C165	QEB51EM-335	3.3μF	25V	Low leak current electrolytic
C166	QEB51HM-105	1μF	50V	"
C167	QEB51HM-224	0.22μF	"	"
C168	QET61CR-476Z	47μF	16V	Electrolytic
C169	QET61ER-106Z	10μF	25V	"
C170	QET61ER-106Z	"	"	"
C171	QFM31HK-102Z	1000pF	50V	Mylar
C172	QFM31HK-102Z	1000pF	"	"
C173	QET61HR-225Z	2.2μF	"	Electrolytic
C174	QET51HR-225	2.2μF	"	"
C175	QCF31HP-223Z	0.022μF	"	Ceramic
C176	QCF31HP-102Z	1000pF	"	"
C191	QFM31HK-682Z	6800pF	"	Mylar

Capacitors

Item No.	Part Number	Rating		Description
C192	QFM31HK-682Z	6800pF	50V	Mylar
C193	QFM31HK-182Z	1800pF	"	"
C194	QFM31HK-182Z	"	"	"
C201	QCF21HP-223	0.022μF	"	Ceramic
C206	QET61ER-106Z	10μF	25V	Electrolytic
C207	QCF31HP-223Z	0.022μF	50V	Ceramic
C208	QCF21HP-223	"	"	"
C209	QCF31HP-223Z	"	"	"
C210	QCF31HP-223Z	"	"	"
C211	QET61HR-105Z	1μF	"	Electrolytic
C212	QET51ER-106	10μF	25V	"
C213	QFM31HK-102Z	1000pF	50V	Mylar
C214	QCF21HP-223	0.022μF	"	Ceramic
C215	QCS31HJ-331Z	330pF	"	"
C216	QCF21HP-103	0.01μF	"	"
C217	QCF31HP-223Z	0.022μF	"	"
C218	QET51CR-476	47μF	16V	Electrolytic
C219	QET60JR-227Z	220μF	6.3V	"
C220	QCF31HP-223Z	0.022μF	50V	Ceramic
C221	QCS21HJ-680	68pF	"	"
C225	QCS31HJ-470Z	47pF	50V	"
C226	QCS31HJ-330Z	33pF	"	"
C271	QCF31HP-223Z	0.022μF	"	"
C272	QCF31HP-473Z	0.047μF	"	"
C273	QCF31HP-473Z	"	"	"
C302	QET61HR-474Z	"	"	"
C303	QET61HR-474Z	"	"	"
C401	QET51HR-475	4.7μF	"	"
C402	QET61HR-475Z	"	"	"
C403	QCS31HJ-471Z	470pF	"	Ceramic
C404	QCS31HJ-471Z	"	"	"
C405	QET50JR-227	220μF	6.3V	Electrolytic
C406	QET50JR-227	"	"	"
C407	QCS31HJ-470Z	47pF	50V	Ceramic
C408	QCS31HJ-470Z	"	"	"
C409	QET60JR-227Z	220μF	6.3V	Electrolytic
C410	QET60JR-227Z	"	"	"
C411	QFM31HK-153	0.015μF	50V	Mylar
C412	QFM31HK-153	"	"	"
C413	QFM31HK-472Z	4700pF	"	"
C414	QFM31HK-472Z	"	"	"
C415	QCS31HJ-471Z	470pF	"	Ceramic
C416	QCS31HJ-471Z	"	50V	"
C417	QEZ0046-105	1μF	"	Electrolytic
C418	QEZ0046-105	"	"	"
C419	QET51CR-227	220μF	16V	"
C420	QET51CR-227	"	"	"
C427	QET51ER-106	10μF	25V	
C428	QET51ER-106	"	"	

Capacitors

Item No.	Part Number	Rating		Description
C451	QCS31HJ-151Z	150pF	50V	Ceramic
C452	QCS31HJ-151Z	"	"	"
C453	QFM31HK-183Z	0.018μF	"	Mylar
C454	QFM31HK-183Z	"	"	"
C461	QCF31HP-223Z	0.022μF	"	Ceramic
C462	QCF31HP-223Z	"	"	"
C463	QCF31HP-223Z	"	"	"

Resistors

Item No.	Part Number	Rating		Description
R101	QRD141J-391S	390Ω	1/4W	Carbon
R102	QRD141J-472S	4.7kΩ	"	"
R103	QRD141J-223S	22kΩ	"	"
R104	QRD141J-102S	1kΩ	"	"
R105	QRD141J-101S	100Ω	"	"
R106	QRD141J-561S	560Ω	"	"
R107	QRD141J-222S	2.2kΩ	"	"
R108	QRD141J-103S	10kΩ	"	"
R109	QRD141J-682S	6.8kΩ	"	"
R110	QRD141J-272S	2.7kΩ	"	"
R113	QRD149J-220S	22Ω	"	"
R121	QRD141J-221S	220Ω	"	"
R122	QRD141J-273S	27kΩ	"	"
R123	QRD141J-103S	10kΩ	"	"
R124	QRD141J-471S	470Ω	"	"
R125	QRD141J-101S	100Ω	"	"
R126	QRD141J-331S	330Ω	"	"
R131	QRD141J-391S	390Ω	"	"
R132	QRD141J-331S	330Ω	"	"
R133	QRD141J-822S	8.2kΩ	"	"
R134	QRD141J-332S	3.3kΩ	"	"
R135	QRD149J-470S	47Ω	"	"
R136	QRD141J-472S	4.7kΩ	"	"
R137	QRD141J-912S	9.1kΩ	"	"
R138	QVP4A0B-103	10kΩ		Variable
R139	QRD141J-473S	47kΩ	1/4W	Carbon
R140	QRD141J-123S	12kΩ	"	"
R141	QRD141J-103S	10kΩ	"	"
R161	QRD141J-823S	82kΩ	"	"
R162	QRD141J-473S	47kΩ	"	"
R163	QRD141J-104S	100kΩ	"	"
R164	QRD141J-163S	16kΩ	"	"
R165	QVP4A0B-472	4.7kΩ	"	Variable
R166	QRD141J-102S	1kΩ	1/4W	Carbon
R167	QRD149J-330S	33Ω	"	"

Resistors

Item No.	Part Number	Rating		Description
R168	QVP4A0B-474	470kΩ		Variable
R169	QRD141J-223S	22kΩ	1/4W	Carbon
R170	QRD141J-223S	"	"	"
R171	QRD141J-473S	47kΩ	"	"
R172	QRD141J-473S	"	"	"
R173	QRD141J-103S	10kΩ	"	"
R174	QRD141J-103S	"	"	"
R175	QRD141J-332S	3.3kΩ	"	"
R176	QRD141J-332S	"	"	"
R177	QRD141J-102S	1kΩ	"	"
R178	QRD141J-222S	2.2kΩ	"	"
R179	QRD141J-334S	330kΩ	"	"
R191	QRD141J-332S	3.3kΩ	"	"
R192	QRD141J-332S	"	"	"
R201	QRD141J-152S	1.5kΩ	"	"
R202	QRD141J-103S	10kΩ	"	"
R203	QRD141J-103S	"	"	"
R204	QRD141J-331S	330Ω	"	"
R205	QRD141J-471S	470Ω	"	"
R206	QRD141J-222S	2.2kΩ	"	"
R207	QRD141J-104S	100kΩ	"	"
R208	QRD149J-151S	150Ω	"	"
R209	QRD149J-101S	100Ω	"	"
R212	QRD141J-151S	150Ω	"	"
R271	QRD141J-153S	15kΩ	"	"
R272	QRD141J-104S	100kΩ	"	"
R273	QRD141J-222S	2.2kΩ	"	"
R274	QRD141J-182S	1.8kΩ	"	"
R276	QRD149J-151S	150Ω	"	"
R301	QRD141J-104S	100kΩ	"	"
R302	QRD141J-473S	47kΩ	"	"
R303	QRD141J-223S	22kΩ	"	"
R304	QRD141J-103S	10kΩ	"	"
R305	QRD141J-223S	22kΩ	"	"
R306	QRD141J-223S	"	"	"
R401	QRD141J-104S	100kΩ	"	"
R402	QRD141J-104S	"	"	"
R403	QRD141J-563S	56kΩ	"	"
R404	QRD141J-563S	"	"	"
R405	QRD141J-222S	2.2kΩ	"	"
R406	QRD141J-222S	"	"	"
R407	QRD141J-134S	130kΩ	"	"
R408	QRD141J-134S	130kΩ	"	"
R409	QRD141J-391S	390Ω	"	"
R410	QRD141J-391S	390Ω	"	"
R411	QRD141J-473S	47kΩ	"	"
R412	QRD141J-473S	"	"	"
R413	QRD141J-224S	220kΩ	"	"
R414	QRD141J-224S	"	"	"
R415	QRD141J-153S	15kΩ	"	"
R416	QRD141J-153S	"	"	"
R417	QRD141J-332S	3.3kΩ	"	"
R418	QRD141J-332S	3.3kΩ	"	"
R419	QRD141J-102S	1kΩ	"	"

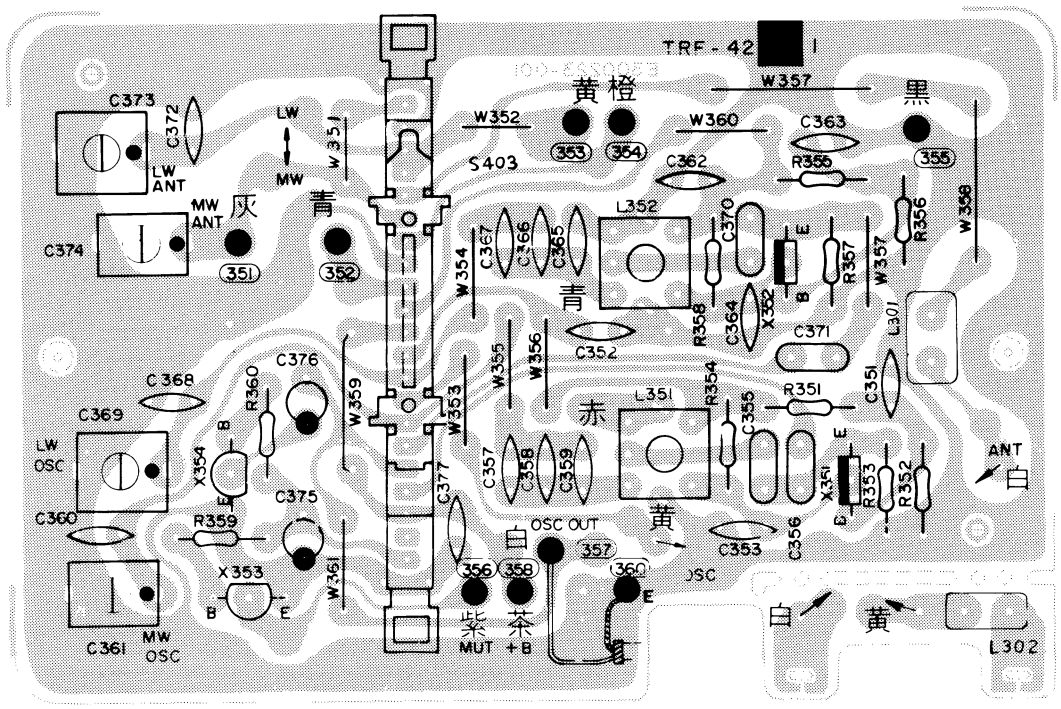
Resistors

Item No.	Part Number	Rating		Description
R420	QRD141J-102S	1kΩ	1/4W	Carbon
R423	QRD141J-223S	22kΩ	"	"
R424	QRD141J-223S	22kΩ	"	"
R450	QVD8A2B-AF5V	250kΩ		Variable
R451	QRD141J-332S	3.3kΩ	1/4W	Carbon
R452	QRD141J-332S	"	"	"
R453	QRD141J-332S	"	"	"
R454	QRD141J-332S	"	"	"
R455	QRD141J-223S	22kΩ	"	"
R456	QRD141J-223S	"	"	"
R457	QRD141J-102S	1kΩ	"	"
R461	QRD141J-334S	330kΩ	"	"
R462	QRD141J-334S	"	"	"
R463	QRD141J-104S	100kΩ	"	"
R464	QRD141J-104S	"	"	"

Others

Item No.	Part Number	Rating	Description
	EWS017-009		Socket wire ass'y
	E03572-019P		Antenna terminal
	QAA2234-002		Tuning capacitor
S401	QSR5845-20A		Rotary switch
S402~4	QSP0239-007		Push switch
TAPE	E03591-002		DIN/PIN jack ass'y

8-(2) TRF-42 MW/LW RF P.C. Board Ass'y



Note: The specific symbols (赤.黒.白 . . . etc.)on a surface of above P.C. Board are actually unrelated to the repairservice and are significant denotement in order to process the proper assembly of P.C. Board at the factory.

Fig. 15

Transistors

Item No.	Part Number	Rating		Description	
		Pc	fT		Marker
X351	2SC461(B)	200mW	230MHz	Silicon	Hitachi
X352	2SC461(B)	"	"	"	"
X353	2SC458(C)	"	"	"	"

Capacitors

Item No.	Part Number	Rating		Description
C351	QCF21HP-473	0.047μF	50V	Ceramic
C352	QCF21HP-473	0.047μF	"	"
C353	QCS21HJ-100	10pF	"	"
C355	QFM31HK-103	0.01μF	"	Mylar
C356	QFM31HK-153	0.015μF	"	"
C357	QCT26PH-151	150pF	16V	Ceramic
C358	QCT26PH-151	150pF	"	"
C359	QCS21HJ-330	33pF	50V	"
C360	QCT26UJ-100	10pF	16V	"
C362	QCF21HP-473	0.047μF	50V	"
C363	QCF21HP-473	0.047μF	"	"
C364	QCS21HJ-560	56pF	"	"
C365	QCT26UJ-270	27pF	16V	"
C366	QCT26CH-680	68pF	"	"
C367	QCT26CH-680	68pF	"	"
C368	QCT26CH-220	22pF	"	"
C370	QFM31HK-223	0.022μF	50V	Mylar
C371	QFM31HK-333	0.033μF	"	"
C372	QCS21HJ-180	18pF	"	Ceramic
C375	QET51HR-474	0.47μF	"	Electrolytic
C377	QCF21HP-473	0.047μF	"	Ceramic

Coils & Transformer

Item No.	Part Number	Rating	Description
L351	E03079-39	MW Osc. Coil	
L352	E03079-38	LW Osc. Coil	
L301	E03522-2R2KY	Choke Coil	
L302	E03522-2R2KY	Choke Coil	

Resistors

Item No.	Part Number	Rating		Description
R351	QRD148J-393S	39kΩ	1/4W	Carbon
R352	QRD148J-822S	8.2kΩ	"	"
R353	QRD148J-152S	1.5kΩ	"	"
R354	QRD148J-821S	820Ω	"	"
R355	QRD148J-393S	39kΩ	"	"
R356	QRD148J-682S	6.8kΩ	"	"
R357	QRD148J-182S	1.8kΩ	"	"
R358	QRD148J-821S	820Ω	"	"
R359	QRD148J-223S	22kΩ	"	"

Others

Item No.	Part Number	Rating	Description
C361	QAT2001-001		Trimmer for MW
C369	QAT2001-005		Trimmer for LW
C373	QAT2001-005		Trimmer for LW
C374	QAT2001-001		Trimmer for MW
S403			MW/LW Band Select

8-(3) TXX-170 Main Amp. and Power Supply P.C. Board Ass'y

The number of TXX-170 □-6 varies according to the area employed. See below Notes (1).

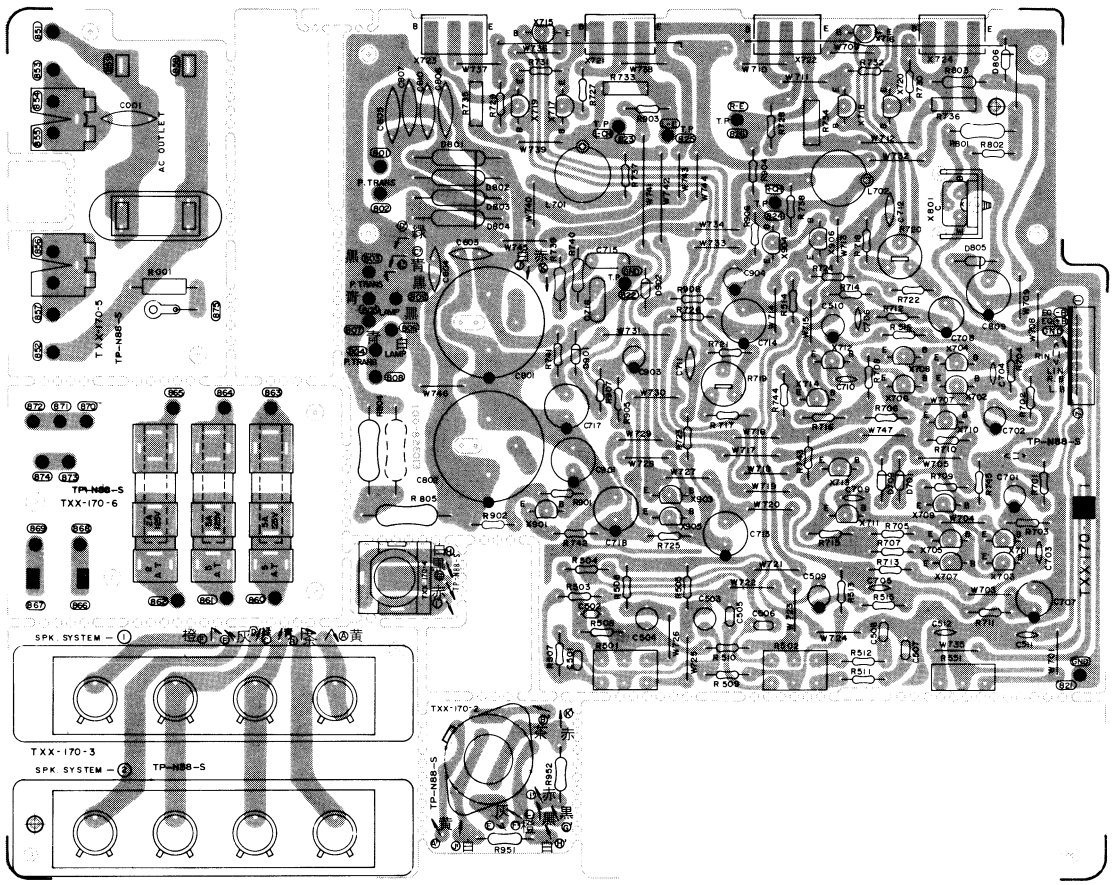


Fig. 16

Each Individual P.C. Board Ass'y Location:

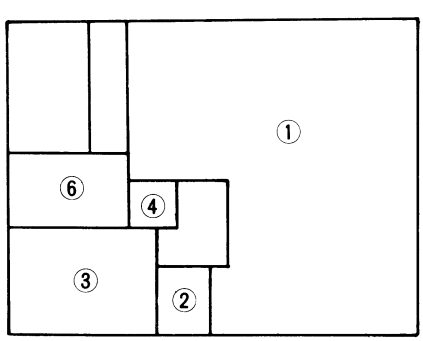


Fig. 17

1 TXX-170-1 Main Amp. P.C. Board Ass'y
2 TXX-170-2 Speaker Switch P.C. Board Ass'y
3 TXX-170-3 Speaker Terminal P.C. Board Ass'y
4 TXX-170-4 Headphone P.C. Board Ass'y
6 TXX-170□-6 Fuse P.C. Board Ass'y
□ : see Note (1)

Notes:

(1) In □ should be indicated . . . . . according to the table below when placing an order.

Designated Area	P.C. Board Ass'y
U.K.	TXX-170FBS
Continental Europe	TXX-170E

(2) The specific symbols (赤.黒.白 . . . etc.) on a surface of above P.C. Board are actually unrelated to the repair service and are significant denotement in order to process the proper assembly of P.C. Board at factory.

Transistors

Item No.	Part Number	Rating		Description	
		Pc	fT		Maker
X701	2SC1775AV(F1)	0.3W	200MHz	Silicon	Hitachi
X702	2SC1775AV(F1)	〃	〃	〃	〃
X703	2SC1775AV(F1)	〃	〃	〃	〃
X704	2SC1775AV(F1)	〃	〃	〃	〃
X705	2SA872AV(E)	〃	120MHz	〃	〃
X706	2SA872AV(E)	〃	〃	〃	〃
X707	2SA872AV(E)	〃	〃	〃	〃
X708	2SA872AV(E)	〃	〃	〃	〃
X709	2SC1775AV(F)	〃	200MHz	〃	〃
X710	2SC1775AV(F)	〃	〃	〃	〃
X711	2SA872AV(E)	〃	120MHz	〃	〃
X712	2SA872AV(E)	〃	〃	〃	〃
X713	2SA949(O,Y)	0.8W	〃	〃	Toshiba
X714	2SA949(O,Y)	〃	〃	〃	〃
X715	2SC458(C)	0.2W	230MHz	〃	Hitachi
X716	2SC458(C)	〃	〃	〃	〃
X717	2SD438(D,E)	0.75W	100MHz	〃	Sanyo
X718	2SD438(D,E)	〃	〃	〃	〃
X719	2SB560(D,E)	〃	〃	〃	〃
X720	2SB560(D,E)	〃	〃	〃	〃
X721	2SD824A(B,C)	60W	25MHz	〃	Hitachi
X722	2SD824A(B,C)	〃	〃		〃
X723	2SB748A(B,C)	〃	22MHz	〃	〃
X724	2SB748A(B,C)	〃	〃	〃	〃
X801	2SD325(D,E)	10W	8MHz	〃	Sanyo
X901	2SA872AV(E)	0.3W	120MHz	〃	Hitachi
X903	2SC2546(E,F)	〃	200MHz	〃	〃
X904	2SC2546(E,F)	〃	〃	〃	〃
X905	2SA1084(D,E)	〃	120MHz	〃	〃
X906	2SA1084(D,E)	〃	〃	〃	〃

Diodes

Item No.	Part Number	Rating	Description	
				Maker
D701	1S2076-31	0.5W	Silicon	Hitachi
D702	1S2076-31	〃	〃	〃
D801	ERC04-02AL	4A	〃	Fuji Denki
D802	ERC04-02AL	〃	〃	〃
D803	ERC04-02AL	〃	〃	〃
D804	ERC04-02AL	〃	〃	〃
D805	XZ-132	0.5W	〃	JRC
D806	XZ-132	〃	〃	〃
D901	1S2076-31	〃	〃	Hitachi
D902	1S2076-31	〃	〃	〃

Coil & Transformers

Item No.	Part Number	Rating		Description
L702	E04049-1R2	1.2μH		Choke coil
L702	E04059-1R2	〃		Choke coil

Capacitors

Item No.	Part Number	Rating		Description
C501	QFM31HK-333	0.033μF	50V	Mylar
C502	QFM31HK-333	〃	〃	〃
C503	QEZ0046-224	0.22μF	〃	Electrolytic
C504	QEZ0046-224	〃	〃	〃
C505	QFM31HK-182	1800pF	50V	Mylar
C506	QFM31HK-182	〃	〃	〃
C507	QFM31HK-183	0.018μF	〃	〃
C508	QFM31HK-183	〃	〃	〃
C509	QET51HR-475	4.7μF	〃	Electrolytic
C510	QET51HR-475	〃	〃	〃
C511	QCS21HJ-151	150pF	50V	Ceramic
C512	QCS21HJ-151	〃	〃	〃
C701	QET51HR-225	2.2μF	〃	〃
C702	QET51HR-225	〃	〃	〃
C703	QCS21HJ-101	100pF	〃	Ceramic
C704	QCS21HJ-101	〃	〃	〃
C705	QCS21HJ-100	10pF	〃	〃
C706	QCS21HJ-100	〃	〃	〃
C707	QET51AR-107	100μF	10V	Electrolytic
C708	QET51AR-107	〃	〃	〃
C709	QCS21HJ-390	39pF	50V	Ceramic
C710	QCS21HJ-390	〃	〃	〃
C711	QCS21HJ-331	330pF	〃	〃
C712	QCS21HJ-331	〃	〃	〃
C713	QET51HR-226	22μF	〃	Electrolytic
C714	QET51HR-226	〃	〃	〃
C715	QFM31HK-473	0.047μF	〃	Mylar
C716	QFM31HK-473	〃	〃	〃
C717	QET51HR-107	100μF	50V	Electrolytic
C718	QET51VR-107	〃	35V	〃
C801	QEW81VA-688E	6800μF	〃	Electrolytic
C802	QEW81VA-688E	〃	〃	〃
C803	QCF21HP-473	0.047μF	50V	Ceramic
C804	QCF21HP-473	〃	〃	〃
C805	QCF12HP-103	0.01μF	500V	〃
C806	QCF12HP-103	〃	〃	〃
C807	QCF12HP-103	0.01μF	〃	〃
C809	QET51CR-227	220μF	16V	Electrolytic
C810	QCF12HP-103	0.01μF	500V	Ceramic
C901	QET51VR-107	100μF	35V	Electrolytic
C903	QET51AR-476	47μF	10V	〃
C904	QET51AR-476	〃	〃	〃

Resistors

Item No.	Part Number	Rating		Description
R501	QVD7A2C-215V	100kΩ(C)		
R502	QVD7A2C-215V	"		
R503	QRD141J-123S	12kΩ	1/4W	Carbon
R504	QRD141J-123S	"	"	"
R505	QRD141J-182S	1.8kΩ	"	"
R506	QRD141J-182S	"	"	"
R507	QRD141J-823S	82kΩ	"	"
R508	QRD141J-823S	"	"	"
R509	QRD141J-182S	1.8kΩ	"	"
R510	QRD141J-182S	"	"	"
R511	QRD141J-681S	680Ω	"	"
R512	QRD141J-681S	"	"	"
R513	QRD141J-472S	4.7kΩ	"	"
R514	QRD141J-472S	"	"	"
R515	QRD141J-562S	5.6kΩ	"	"
R516	QRD141J-562S	"	"	"
R551	QVG4A2W-1F5	250kΩ(W)	"	Variable (Bal.)
R701	QRD141J-222S	2.2kΩ	"	Carbon
R702	QRD141J-222S	"	"	"
R703	QRD141J-823S	82kΩ	"	"
R704	QRD141J-823S	"	"	"
R705	QRD149J-101S	100Ω	"	"
R706	QRD149J-101S	"	"	"
R707	QRD149J-101S	"	"	"
R708	QRD149J-101S	"	"	"
R709	QRD149J-391S	390Ω	"	"
R710	QRD149J-391S	"	"	"
R711	QRD141J-561S	560Ω	"	"
R712	QRD141J-561S	"	"	"
R713	QRD141J-683S	68kΩ	"	"
R714	QRD141J-683S	"	"	"
R715	QRD141J-272S	2.7kΩ	"	"
R716	QRD141J-272S	"	"	"
R717	QRD141J-332S	3.3kΩ	"	"
R718	QRD141J-332S	"	"	"
R719	QVP4A0B-102	1kΩ		Variable
R720	QVP4A0B-102	"		"
R721	QRD141J-152S	1.5kΩ	1/4W	Carbon
R722	QRD141J-152S	"	"	"
R723	QRD141J-332S	3.3kΩ	"	"
R724	QRD141J-332S	"	"	"
R725	QRD141J-122S	1.2kΩ	"	"
R726	QRD141J-122S	"	"	"
R727	QRD149J-100S	10Ω	"	"
R728	QRD149J-100S	"	"	"
R729	QRD149J-100S	"	"	"
R730	QRD149J-100S	"	"	"
R731	QRD149J-271S	270Ω	"	"
R732	QRD149J-271S	"	"	"
R733	QRM024K-R22	0.22Ω	2W	Metal plate
R734	QRM024K-R22	"	"	"
R735	QRM024K-R22	"	"	"
R736	QRM024K-R22	"	"	"
R737	QRD149J-4R7S	4.7Ω	1/4W	Carbon

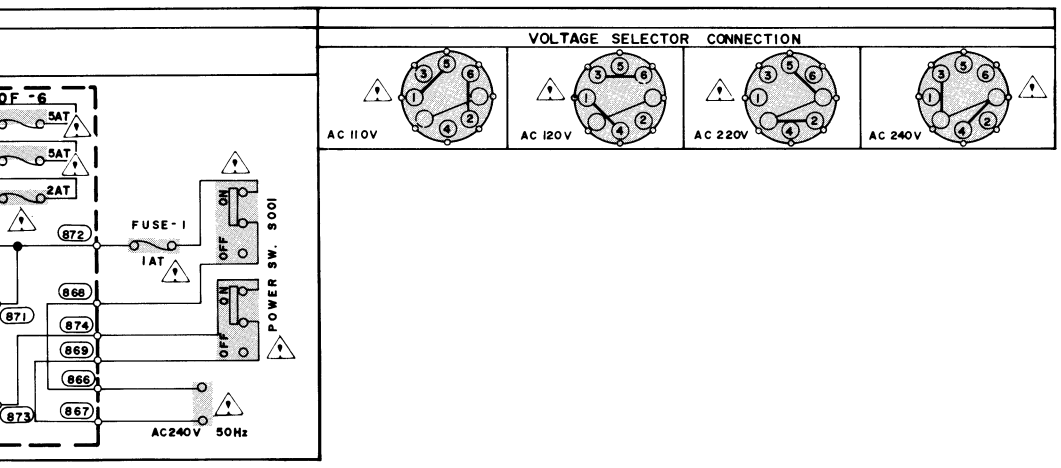
Resistors

Item No.	Part Number	Rating		Description
R738	QRD149J-4R7S	4.7Ω	1/4W	Carbon
R739	QRZ0051-4R7	"	"	Fuseble
R740	QRZ0051-4R7	"	"	"
R741	QRD149J-470S	"	"	"
R742	QRD149J-470S	"	"	"
R743	QRD149J-330S	33Ω	"	"
R744	QRD149J-330S	"	"	"
R745	QRD141J-153S	15kΩ	"	"
R801	QRG017J-470S	47Ω	1W	Oxide metal film
R802	QRD141J-392S	3.9kΩ	1/4W	Carbon
R803	QRD129J-122	1kΩ	1/2W	"
R901	QRD141J-103S	10kΩ	1/4W	Carbon
R902	QRD149J-100S	10Ω	"	"
R903	QRD141J-102S	1kΩ	"	"
R904	QRD141J-102S	"	"	"
R905	QRD141J-681S	680Ω	"	"
R906	QRD141J-681S	"	"	"
R907	QRD141J-153S	15kΩ	"	"
R908	QRD141J-153S	"	"	"
R951	QRD129J-181	180Ω	1/2W	"
R952	QRD129J-181	"	"	"

Others

Item No.	Part Number	Rating	Description
	E03572-007EM		Speaker terminal
	E300176-001		L-Bracket
	E300178-001		Heat sink
	E300179-001		Circuit board holder
	E300179-002		"
	E48965-002		Fuse clip (TXX-170 C)
	E60171-003		Heat sink (X801)
	QMS6302-102		Headphone jack
	QMV5005-007		7 pin plug
	QSR0083-001		SPK select SW.

9 . R-S5L Schematic Diagram



Notes:

1. Parts in red indicate transistors or ICs.
2. ▬▬ indicates signal path.
3. —— indicates positive B power supply.
4. —— indicates negative B power supply.
5. When replacing the parts in the darkened area ▒▒ and those marked with ⚠ be sure to use the designated parts to ensure safety.
6. This is the standard circuit diagram.
   The design and contents are subject to change without notice.

VOLTAGES

THESE VOLTAGES ARE MEASURED WITH DC.V.T.V.M AT NONSIGNAL INPUT.

TUNER IC VOLTAGE

IC NO.	IC NAME	SELECT SW POSITION	IC PIN NO. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC 101	HAI 1225	FM AUTO MUTING	1.97	1.97	1.97	0	0.00 / 2.45	5.69	5.84	5.67	5.67	5.67	11.56	4.77 / 2.45	0.00	0	5.00	3.57
IC 102	UPC1161C	FM AUTO	12.13	2.24	5.80	9.97	9.98	5.25	5.25	0	12.50	2.26	2.24	2.26	2.26	2.26	3.42	1.98
IC 103	HAI197	AM	5.10	2.18	12.05	9.70	12.05	3.68	1.31	2.85	8.07	0	11.62	1.52	0.69	1.47	0.00	0.91

TFC-27E

MW-LW BAR ANTENNA

ANTENNA: FM 75Ω, GND, AM EXT.

X101 2SK168(E,F)

X102 2SC535(B,C)

X104 2SC535(B,C)

X103 2SC1342(B,C)

X353 2SC458C

X351 2SC461(B)

X352 2SC461(B)

X252 2SC461(B)

X271 2SC461(B)

IC103 HA1197

IC102 μPC1161C

X401 2SA872AV (E)

X403 2SC2546 (E,F)

X405 2SC458(D)

X406 2SA872AV(E)

X402

X404

T201

CF201 SFZ 450A

CF101

CF102

L101

L102

L103

L204

L271

L301

L302

L351

L352

S403

TRF-42

D131 S2076-31

D251 IS2076-31

S401f

S401g

S401b

S402a

S402b

S402d

S401 SOURCE

S402 TAPE

TAPE INDICATOR TLG205

LIMITTER

MUTING LEVEL

LEVEL DET.

SIGNAL METER ADDER

BY PASS

R138: MUTING LEVEL ADJ.

R168: SEPARATION ADJ.

R165: FREE RUN ADJ.

LEFT

PHONO

RIGHT

LEFT RIGHT — AUX

LEFT RIGHT — PLAY

LEFT RIGHT — TAPE

LEFT — REC

SWITCHES

S401: SOURCE SELECTOR (ROTARY)
1. FM MONO
2. FM AUTO MUTING
3. MW/LW
4. PHONO
5. AUX

S402: TAPE MONITOR (PUSH ON)

S403: AM-MW/LW (PUSH LW)

S404: LOUDNESS (PUSH ON)

VOLUMES

R450 : MASTER VOLUME
R165 : P.L.L. FREE RUN ADJ. VOLUME
R168 : FM STEREO SEPARATION ADJ. VOLUME
R138 : MUTING LEVEL ADJ. VOLUME

TRANSISTORS

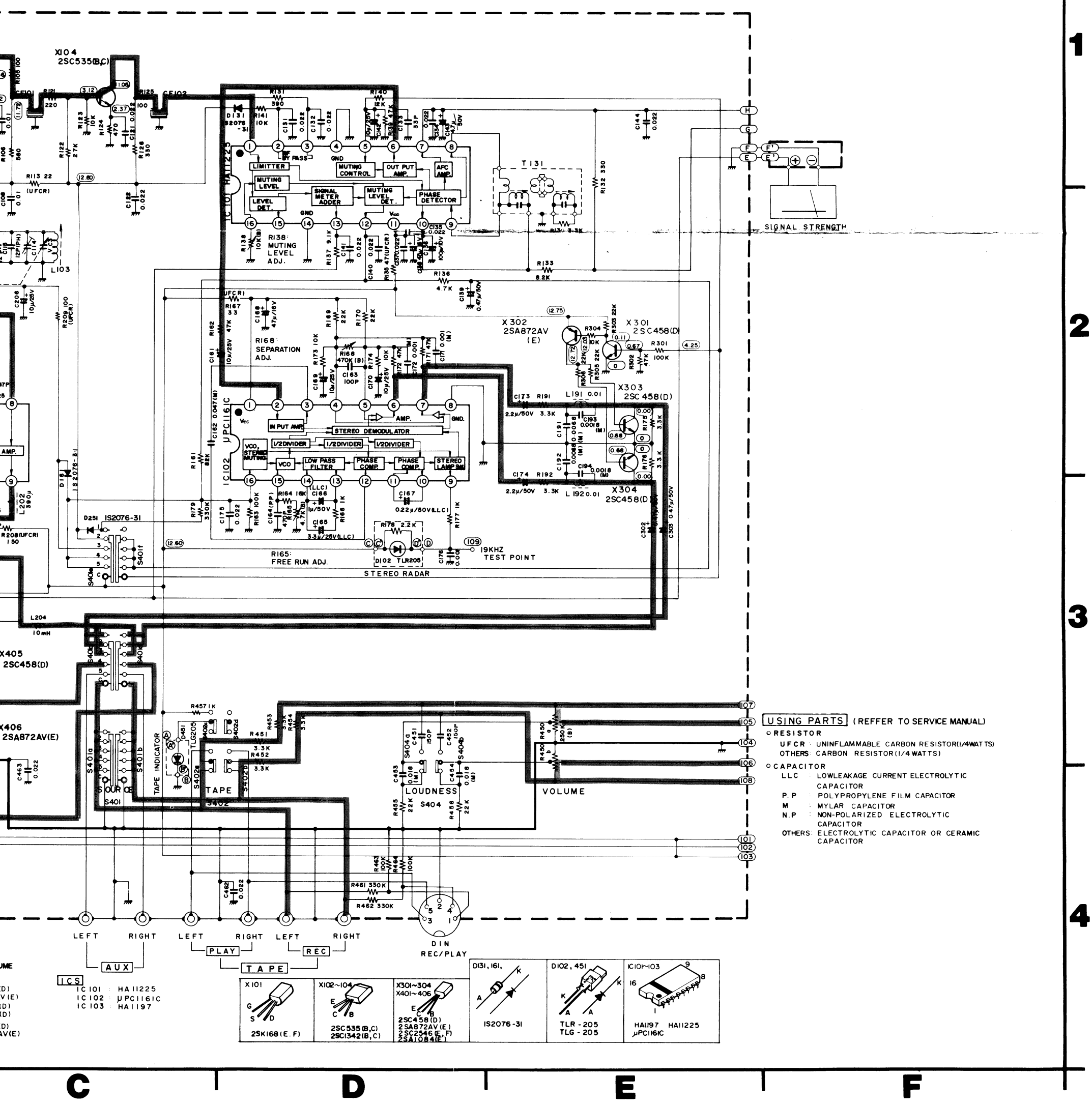
X101	2SK168 (E,F)	X301	2SC458(D)
X102	2SC535(B,C)	X302	2SA872AV(E)
X103	2SC1342(B,C)	X303	2SC458(D)
X104	2SC535(B,C)	X304	2SC458(D)
X401, 402	2SA872AV(E)	X405	2SC458(D)
X403, 404	2SC2546(E,F)	X406	2SA872AV(E)

ICS

IC 101 : HA11225
IC 102 : μPC1161C
IC 103 : HA1197

X101 2SK168(E.F)

IC PIN NO.	4	5	6	7	8	9	10	11	12	13	14	15	16
7	0	0.07 / 2.45	5.69	5.84	5.67	5.67	5.67	11.56	4.87 / 2.45	0.00	0	5.00	3.57
0	9.97	9.98	5.25	5.25	0	12.50	2.26	2.24	2.26	2.26	2.26	3.42	1.98
5	9.70	12.05	3.68	1.31	2.85	8.07	0	11.62	1.52	0.69	1.47	0.00	0.91



USING PARTS (REFFER TO SERVICE MANUAL)

- RESISTOR
  - UFCR : UNINFLAMMABLE CARBON RESISTOR(1/4WATTS)
  - OTHERS : CARBON RESISTOR(1/4 WATTS)
- CAPACITOR
  - LLC : LOWLEAKAGE CURRENT ELECTROLYTIC CAPACITOR
  - P.P : POLYPROPYLENE FILM CAPACITOR
  - M : MYLAR CAPACITOR
  - N.P : NON-POLARIZED ELECTROLYTIC CAPACITOR
  - OTHERS : ELECTROLYTIC CAPACITOR OR CERAMIC CAPACITOR

Notes:

1. Parts in red indicate transistors or ICs.
2. ▬▬ indicates signal path.
3. — indicates positive B power supply.
4. —— indicates negative B power supply.
5. This is the standard circuit diagram.
   The design and contents are subject to change without notice.

10. Packing Materials and Part Numbers

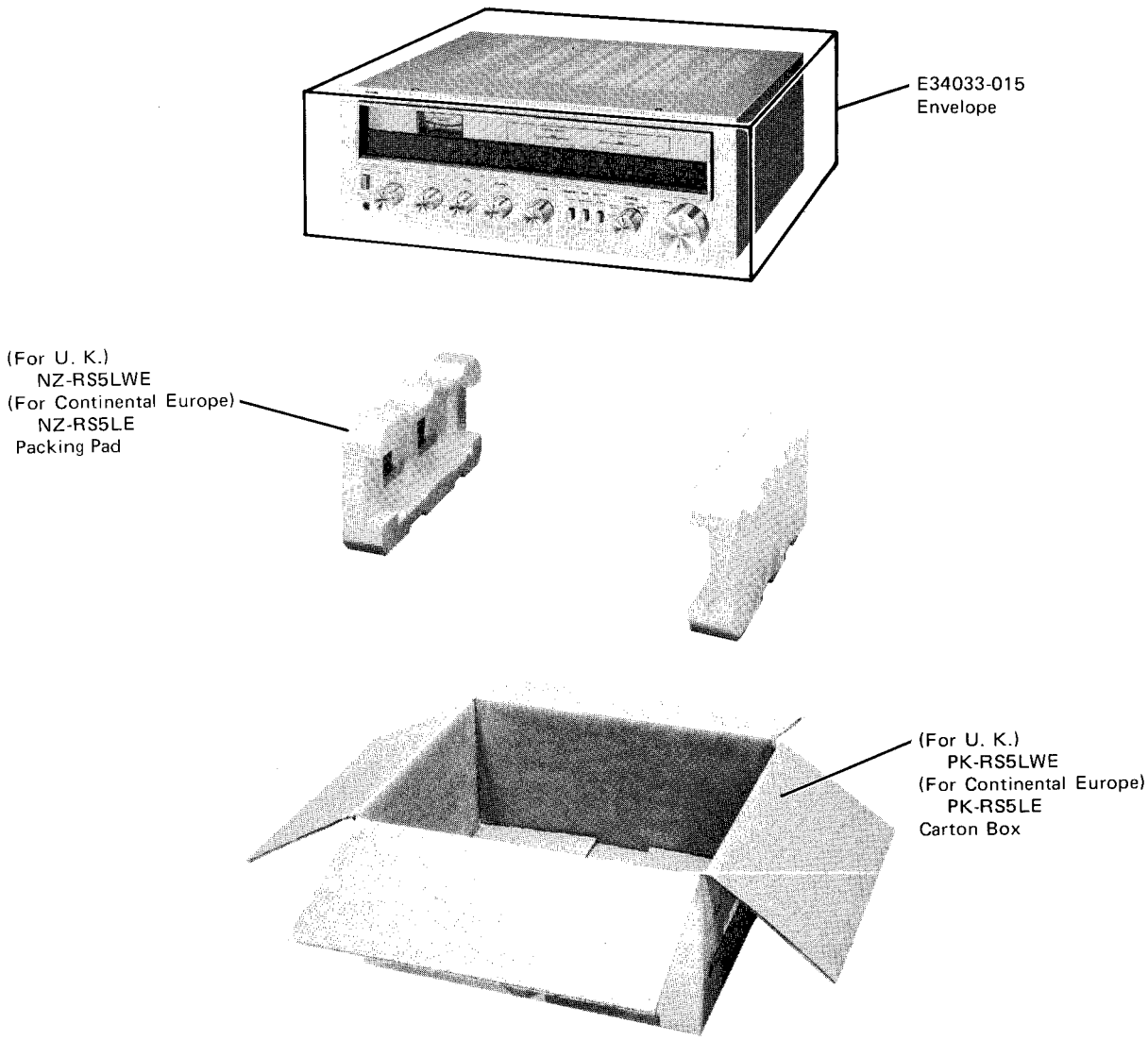


Fig. 18

11. Accessories List

Parts Number	Description	Q'ty
See Page 19	Instruction Book	1
BT20013B	Warranty Card (U.K. only)	1
E41202-2	Envelope for Instruction Book	1

12. Parts List with Specified Numbers for Designated Areas

Page	Item No.	Description	Continental Europe	U.K.
3	22	Power Transformer ⚠	E03077-40C	E03077-40CBS
	19	Audio P.C. Board Ass'y	TXX-170E	TXX-170FBS
4	50	Power Switch ⚠	QSP2110-004	QSP2110-004BS
5	26	Power Cord ⚠	QMP3900-200	QMP9017-008BS
	56	Fuse Socket ⚠	QMG0301-003	QMG0301-003BS
	57	Voltage Selector ⚠	QSR0085-001	QSR0085-001BS
		Fuse primary ⚠	QMF51A2-1R0L (1AT)	QMF51A2-1R0LBS (1AT)
		Fuse secondary 1 ⚠	QMF51A2-5R0S (5AT)	QMF51A2-5R0SBS (5AT)
		Fuse secondary 2 ⚠	QMF51A2-2R0L (2AT)	QMF51A2-2R0LBS (2AT)
15		Instruction Book	E30580-731A	E30580-731ABS